

**ICE DETECTION APPARATUS AND METHOD****Abstract**

Ice detection apparatus (1) for monitoring ice accretion on aircraft surfaces, comprising an array of optical fibres (3, 4, 5, 6, 7 and 8) which are mounted flush with an outer surface (17) of an aircraft skin (9), and an intermediately located electromagnetic radiation emitter (10) which is provided by an optical fibre. In use radiation is emitted by the emitter generally outwardly of the aircraft surface, and the layer of accreted ice (15) diffuses the emitted radiation scattered and reflected. The diffused radiation is detected by the sensors, and the spatial distribution of the detected intensity diffused radiation about the emitter can be used to calculate the thickness of the layer of ice and the type of ice.